GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

NEWFOUNDLAND AND LABRADOR
Waste Management Strategy

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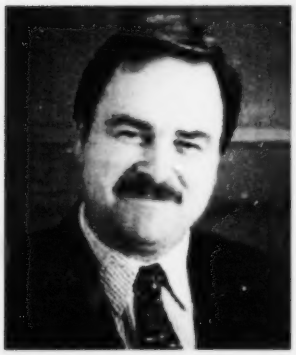
GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR

Department of Environment

NEWFOUNDLAND AND LABRADOR
Waste Management Strategy

April 2002

MESSAGE FROM THE MINISTER



For generations, the people of our province have taken the simple solution to dealing with garbage – dump it into a landfill site or burn it. However, our current practices cannot continue. We need to move from simply dumping solid waste into landfill sites to developing long-term solutions which will benefit our environment, our communities, and our people. The process began with the public consultations on waste management conducted during the summer of 2001, and we are now about to embark on the next phase with the implementation of a Provincial Waste Management Strategy.

When the strategy is fully realized throughout Newfoundland and Labrador, the number of landfill sites will be greatly reduced, we will be diverting more of the waste actually going for disposal, and waste management sites will be operated according to up-to-date standards which minimize the impacts on our environment. While these are aggressive goals, I firmly believe they are achievable.

I extend sincere thanks to the members of the Waste Management Advisory Committee, Derm Flynn, Catherine Barrett, Jessie Bird and Priscilla Boutcher, for their commitment, hard work and dedication in conducting public consultations. I also want to recogtnize my colleague, former Environment Minister Ralph Wiseman, whose leadership and guidance pioneered the development of this strategy.

Government is committed to addressing the waste management issues in our province. This strategy provides the framework to meet the challenge, and together, we will achieve modern waste management in Newfoundland and Labrador.

Kevin Aylward
MINISTER

Executive Summary

Each year, Newfoundlanders and Labradorians generate more than 400,000 tonnes of waste materials at a rate of approximately two kilograms per person per day. To date, the approach for handling this waste has been to simply send it to disposal to one of the 240 landfill sites throughout the province. However, long-term solutions are needed to address the challenge of effectively handling solid waste if we are to ensure the health and well-being of our communities and the protection of our environment.

Both Government and people of Newfoundland and Labrador must take responsibility for the management of our waste and to improve our waste practices. The planning and delivery of waste management is the direct responsibility of municipalities and communities, while the provincial government must provide the framework for waste management by setting policies, regulations and standards. Government recognizes it is now time to provide a new framework through the development of a provincial waste management strategy.

After conducting public consultations with the people of our province, we have developed a comprehensive, modern Provincial Waste Management Strategy. The strategy will enable us to divert 50 percent of the materials currently going to disposal by 2010, to reduce the number of waste disposal sites by 80 percent, to eliminate open burning at disposal sites by 2005 and phase out the use of incinerators by 2008, to phase out use of unlined landfill sites by 2010 and to implement full province-wide modern waste management by 2010.

The Provincial Waste Management Strategy is premised on five primary actions which will enable our province to have modern waste management. Those actions are: increasing waste diversion, establishing waste management regions, developing modern standards and technology, maximizing the economic and employment opportunities, and public education.

Government recognizes that the strategy must be implemented in a manner which successfully balances community and environmental health with economic capability. We are committed to continuing to work with communities to achieve our goals and to ensure that Newfoundland and Labrador has modern and effective waste management practices.

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INTRODUCTION

The handling of garbage – solid waste – has become an increasing concern in today's society. Effective solid waste management is a challenge for communities and governments throughout Canada, including Newfoundland and Labrador.

Each year in this province, it is estimated that Newfoundlanders and Labradorians generate more than 400,000 tonnes of waste materials a year at a rate of approximately two kilograms per person per day. This waste is sent to approximately 240 disposal sites which serve an estimated 654 communities. Many of these sites are at the end of their useful life, and there are approximately 50 aging teepee incinerators in use throughout the province.

Communities are seeing nuisance problems from poorly or improperly maintained landfill sites and concerns have been expressed that the many, unsightly dumps are not in keeping with the expectations of the province's growing tourism industry. Many of the landfill sites experience problems with uncontrolled burning at the sites, smoke, vermin, odours and excessive wind borne litter.

Waste management is the responsibility of everyone – individuals, communities, businesses, industries, and government. The planning and delivery of waste management is the direct responsibility of municipalities and communities, while the provincial government must provide the framework for waste management by setting policies, regulations and standards. Government recognizes it is now time to provide a new framework through the development of a provincial waste management strategy.

Our Actions to Date

Over the past several years, Government has taken steps to respond to the challenge of waste management. These actions provide the foundation for the provincial waste management strategy:

- In 1994, Government instituted a ban on disposal of untreated sewage sludge and oil contaminated soil in landfills in the eastern region, later expanding this ban to other areas of the province.

- In 1996, Government established the Multi-Materials Stewardship Board to develop, implement, and manage a variety of waste diversion programs in Newfoundland and Labrador in accordance with Government priorities.

- In1997, the deposit refund program for beverage containers, the first province-wide waste diversion program, was initiated. To date, this program has been successful in diverting approximately 60 per cent of the beverage containers from landfills, has led to the establishment of 37 Green Depots and has created more than 200 full and part time jobs.

- In 1997, Government established the Newfoundland and Labrador Waste Management Trust Fund. The Trust Fund provides financial assistance to aid in the development and implementation of waste management initiatives in the province. It is governed by provincial waste management regulations and administered by the Multi-Materials Stewardship Board under direction of the Minister of Environment. The principal source of funds for the Trust Fund is surplus revenues from the province's bever age container deposit refund system.

- In April 1999 and October 2000, proposals to the Trust Fund for a variety of waste management initiatives resulted in funding for education and information projects, cleanups, school recycling programs, pilot projects on waste diversion and for municipalities to investigate the practicality of regional waste management systems.

GOVERNMENT'S COMMITMENT

In the March 13, 2001 Speech from the Throne, Government articulated its intention to develop a long-term provincial strategy to address waste management and to seek the views of individuals, communities and other interested parties on that strategy. For the public consultation component, the Minister of Environment appointed an independent four-person Waste Management Advisory Committee in May 2001.

Public Consultations

Chaired by Derm Flynn, then president of the Newfoundland and Labrador Federation of Municipalities, the committee conducted public consultations throughout the province during the summer of 2001. The committee prepared a final report, *A Call to Action On Environmental Protection*, which provided an overview of the information received during the public consultations and outlined recommendations for Government on how to proceed with modern waste management. It was presented to Government in October 2001.

The Waste Management Advisory Committee report stated that "there was a general recognition that our present ways of handling waste must change, for the health of our environment and communities." It reported there is strong public support for developing and implementing a provincial waste management strategy. In particular, the committee identified several themes which emerged from the consultations and were used to design a provincial strategy:

- increase the amount and types of materials recycled;
- combine community resources to make waste management affordable;
- Government's commitment to modern waste management must not waver; and
- provide public information on the importance of modern waste management.

Our Goals

The provincial waste management strategy will enable Government to achieve the following goals:

- divert 50 percent of the materials currently going to disposal by 2010;
- reduce the number of waste disposal sites by 80 percent;
- eliminate open burning at disposal sites by 2005 and phase out the use of incinerators by 2008;
- phase out use of unlined landfill sites by 2010; and
- full province-wide modern waste management by 2010.

These goals will be achieved through five primary actions which embody the provincial waste management strategy:

1. Increase Waste Diversion
2. Establish Waste Management Regions
3. Develop Modern Standards and Technology
4. Maximize Economic and Employment Opportunities associated with waste management
5. Public Education

The Role of Multi-Materials Stewardship Board

The Multi-Materials Stewardship Board (MMSB) has been a key component in Government's waste management initiatives, and it will play an integral role in implementing and achieving modern waste management. Specifically, MMSB will:

- continue to develop, manage and administer waste diversion programs and negotiate stewardship agreements;
- act as the selling agent for recycled materials, in addition to beverage containers, as needed for the programs they administer derectly
- continue to develop and manage provincial public information and awareness programs on waste management; and
- through the Newfoundland and Labrador Waste Management Trust Fund, continue to fund waste management information and education programs and pilot demonstration projects.

Action Item 1: Increase Waste Diversion

What is waste?

Waste materials are generated from three main sources: residential, institutional, commercial and industrial, and construction and demolition.

Residential Waste: solid waste material generated, diverted or disposed from residential dwellings, primarily private homes. It is estimated that 34 percent of the solid waste in the province is generated from this source.

Institutional, commercial and industrial (ICI) waste: waste material generated, diverted or disposed of from institutional, commercial and industrial establishments such as manufacturing, transportation, retail, wholesale and warehousing, commercial(e.g., restaurants and banks) and non-commercial (e.g., health and education) services. This type of waste accounts for approximately 60 percent of the solid waste in the province.

Construction and demolition (C&D) waste: solid waste material from residential and commercial construction, renovation, demolition and land-clearing, as well as road and bridge construction waste (concrete and asphalt). Approximately six percent of the solid waste in the province comes from this source.

Most of the waste generated in Newfoundland and Labrador is classified as paper and organic. The remainder is classified as plastic, glass, and inorganic. The table below outlines the percentage of each type of waste generated in the province.

MATERIAL TYPE	PER CENT OF TOTAL WASTE
Paper	37
Organic	30
Metal	9
Plastic	8
Glass	6
Inorganic	4
Other	6

What is Waste Diversion?

While waste cannot, in practical terms, be completely eliminated, the amount of waste going for disposal can and must be reduced. Many jurisdictions across Canada have adopted the proven approach of waste diversion as a method for reducing the amount of material going for disposal. Successful waste diversion removes volumes of specific types of material from the waste stream and is based on the widely accepted hierarchy of waste management: reduce, reuse, recycle, recovery, and disposal.

Reduce: decrease the amount of waste created in the first place; it can be achieved through reduction in use of once-through, disposable and limited use products, production of more durable goods, and elimination of excess packaging.

Reuse: reuse materials and products rather than discard them can displace the need for new production; for example, beverage containers, rechargeable batteries, and reusable laser-printer cartridges.

Recycle: reprocess or recycle waste materials into another usable form displaces the need for new material in production of consumer goods; for example, recycling newsprint, bond paper and cardboard can displace some of the original fibre used to make new paper products.

Recovery: gain some useful benefit (materials or energy) from waste; for example, most organic material can be broken down through decomposition to form a rich soil-like material, compost, which can be used to enrich soil or as a cover material on disturbed land.

Disposal: final placement of waste material with no economic or environmental benefits achieved.

Achieving Waste Diversion

Many of the materials currently treated as waste in Newfoundland and Labrador are valued elsewhere as resources and raw materials for new businesses and employment. In Nova Scotia, for example, materials such as paper, newspaper, glass, plastics, tins, and cardboard are separated at source (whether household, business, or institution), collected and either used by a business in the province or marketed outside the province. To achieve a 50 percent reduction in the amount of materials going to disposal, province-wide waste diversion programs based on the waste management hierarchy

will be established. These programs will apply to materials from all waste sources: residential, industrial, commercial, institutional, and construction and demolition. Initially, these programs will be directed toward materials comprising a large volume of the waste generated in the province and which have an identified market or use such as paper, corrugated cardboard, newsprint and bond paper; organic material, used tires, and used oil. However, as market research continues, programs for other materials will be considered. Research will also investigate the reduction of waste entering the province in the form of packaging and transportation containers.

Government recognizes that it is important to lead by example. All departments, and institutions, Crown corporations, and agencies receiving a significant portion of their funding from the provincial government will be required to provide a waste management plan indicating procedures, programs and resources that are or will be in place to meet the waste management strategy and province-wide waste diversion policies.

THE STRATEGY

- **Disposal Bans**
  In the short term, Government will implement disposal bans on tires, oil, corrugated cardboard, newsprint, bond paper, and organic material. For the long-term, Government will research the possibility of disposal bans for other materials, including household hazardous waste products.

- **Diversion Programs**
  Within the next 12 months, Government, in conjunction with MMSB, will implement a program for recovery of used oil. MMSB will continue to research waste diversion programs for other materials, such as paint products.

- **Enhance Green Depots**
  The system of Green Depots throughout the province provides the foundation for enhancing and expanding household waste diversion, primarily through recycling. MMSB will continue to work with the Recycling Depot Operators Association of Newfoundland and Labrador and with the Green Depots to enhance their capabilities and participation in waste diversion programs.

- **Research New Waste Diversion Programs**
  MMSB will continue to be the lead agency for research and work to identify markets for waste materials and provide this information to Government and Regional Waste Management Authorities. MMSB will also continue discussions

with other provinces, primarily the other Atlantic provinces, on inter-provincial cooperation and waste diversion programs, including associated economic opportunities.

- **Departmental Plans**
  Within the next 24 months, provincial government departments and institutions, Crown corporations, and agencies will develop waste management plans in accordance with the provincial strategy.

Action Item 2: A Regional Approach to Waste Management

What is Regional Waste Management?

A regional waste management system is a formal partnership among incorporated communities, Local Service Districts and unincorporated areas to provide integrated waste management services. Establishing regional waste management systems enables communities to pool resources and to accomplish together what is difficult to do individually. This approach also helps to dramatically reduce the number of waste disposal sites.

Typically, a waste management system includes the collection, diversion (reuse, recycling, recovery/composting), and disposal of the municipal waste for the communities in the region. However, each region does not necessarily have a disposal facility. The use of transfer stations, facilities for the temporary delivery and storage of waste before it is transported to a final disposal site, is common in many Canadian provinces.

In Newfoundland and Labrador, as indicated during the public consultations, communities are recognizing that modern waste management is best achieved through regional cooperation. Many communities have voluntarily combined interests to conduct preliminary feasibility studies on a regional approach to waste management, with funding from the Newfoundland and Labrador Waste Management Trust Fund. These initiatives provide a foundation for the regional component of the provincial waste management strategy.

Regional Waste Management Systems

To determine the number of waste management regions and the number and location of final waste disposal sites for Newfoundland and Labrador, several factors were considered: the distribution of our population; geographic distances and transportation infrastructure; capital and operating costs of waste management facilities; information on waste generation; and the experiences of the other Atlantic provinces.

To reduce the number of waste disposal sites in the province by 80 percent, 15 waste management regions will be established (see Appendix A for detailed maps). All communities in an area whether an incorporated municipality, a Local Service District, or an unincorporated community, will be part of a waste management region.

Each regional waste management system will have both waste diversion and waste handling facilities, services and operations. These systems will provide communities in the identified regions with waste separation and collection; central composting; recyclables collection centres; specific disposal sites for construction and demolition debris and metals; and household hazardous waste management and disposal facilities.

With a focus on waste diversion, not every region will require a final waste disposal site. Residual waste will go to one of several provincial final waste disposal facilities. The regional waste management systems will transport residual waste from the region via a transfer station for disposal to the nearest final waste disposal facility. Transfer stations will be enclosed facilities with controlled access and may include other waste management activities such as recyclables sorting and storage. Residual waste may be delivered directly to the final waste disposal facility from within the host region.

The basis for operations in any given region, with or without a disposal facility, will be:

- require source separation to meet provincial waste diversion programs and the requirements of the regional authority;
- collection from individual households (i.e., curbside collection);
- delivery of materials to the regional sorting, composting or disposal facility as appropriate;
- processing and transportation of recyclables to major shipping points or markets;
- provision of practical diversion/disposal means for bulky materials and C&D materials; and
- provision of a scheduled opportunity, at least once a year, to dispose of household hazardous waste.

A Technical Advisory Committee will be established to assist communities with waste management planning. Each region will also have a coordinator to actively promote waste diversion through ongoing research into additional diversion opportunities, monitoring waste management operations, and developing and delivering public information and education programs in the region.

Regional Waste Management Authorities

Regional waste management systems will be designed, financed and operated by Regional Waste Management Authorities (RWMA). A RWMA will be established as a legal, incorporated entity operated by a board of directors with representation from the municipalities, Local Service Districts and unincorporated communities in the waste management region.

A Regional Waste Management Authority will be able to:

- provide a solid waste management service, including the collection and disposal of solid waste;
- construct, acquire, establish, control, manage, and operate solid waste collection, recycling and disposal facilities;
- finance its undertakings;
- assess, charge and collect fees for services; and
- engage and pay personnel

Each RWMA will prepare for Government's approval a business plan, an operations plan and environmental assessments for the regional waste management system. Plans must include an assessment of environmental risk, an environmental management system that outlines policies and practices that will be used; a closure plan; and a regional communication and education program. Facilities must be designed to be able to meet the needs of the region for a minimum of 50 years.

Isolated Areas

Given the geographic make-up of Newfoundland and Labrador, Government recognizes it is impossible for all communities to participate in a regional approach to waste management. For isolated areas, community disposal sites will remain in operation, however, emphasis will be on improving existing disposal sites and enhancing opportunities for diversion. Isolated communities will be expected to contribute to the goal of 50 percent reduction of waste sent to disposal.

As indicated during the public consultations, geographically isolated communities have a strong interest in improving waste management practices and in participating in province-wide diversion programs. Government recognizes that alternative approaches must be developed for these communities and is committed to working with isolated areas to:

- provide information and education on modern waste management;
- assist with recyclables storage and transportation assistance (financial and/or physical);
- investigate the possibility of an annual collection of white goods, scrap vehicles and other metals in isolated areas through a public/private partnership; and
- assist with development of economic and effective community composting in isolated communities.

The waste disposal alternatives for isolated communities will be determined on a community by community basis, in order to address immediate, local environmental conditions and considerations. While the goal is to eliminate incineration as a means of disposal, Government recognizes that incineration may remain in use in isolated communities, as a last resort following waste diversion.

The Cost of Regional Waste Management

Each year in Newfoundland and Labrador, approximately $21 million is spent on waste collection and disposal. However, the investment in waste management has not kept pace with the increasing amounts and types of waste. Implementing modern waste management initially requires significant financial investment to build the necessary infrastructure. In addition, there will be significant costs to close obsolete disposal sites and equipment.

The cost of modern waste management was discussed during the public consultations. Individuals and communities recognize that implementing a modern waste management strategy will increase waste management costs. However, it is also recognized that not changing waste management practices will have even greater costs – financial and environmental.

The total capital cost of the provincial waste management strategy, phased-in over a number of years, is estimated to be $150-$200 million. The capital costs for new waste management infrastructure may be financed through a combination of public-private partnerships, private sector ownership and operation, and municipal, provincial, and federal cost-sharing. Operating costs will be offset through taxes, tipping fees and revenues from waste diversion.

Each region will operate financially on a stand-alone basis, with operations funded from the households, businesses, and institutions in the region through taxes, tipping fees and revenues from regional and/or provincial waste diversion programs. Waste Management Authorities may set differential tipping fees to encourage waste diversion, with higher fees for unsorted waste and low fees for recyclables that can be marketed or are part of a province-wide diversion program.

The Strategy

- **Establish Regional Waste Management Systems and Final Waste Disposal Sites**
  Government will immediately begin to prioritize the establishment of the 15 Regional Waste Management Systems and the final waste disposal sites. Initial focus will be those regions facing crisis situations.

- **Regional Coordinators**
  As the Regional Waste Management Systems are established, regional coordinators will be hired and trained. MMSB will fund a waste management coordinator position in each waste management region for up to two years.

- **Isolated Areas**
  Government will work with isolated areas to develop programs and alternatives to meet the provincial waste management goals. MMSB will also research waste disposal alternatives for isolated communities.

- **Financing Options**
  Government will investigate funding options for modern waste management, including public-private partnerships, private sector ownership and operation, and cost-shared federal-provincial-municipal agreements.

ACTION ITEM 3: MODERN STANDARDS AND TECHNOLOGY

Even with maximum waste diversion, there will always be a need for waste disposal. However, the goal of modern waste management is to reduce the number of waste disposal sites, and to ensure that those sites are operated in a manner that minimizes the environmental impacts.

Government will provide the standards and regulations to govern the design, construction and operation of waste management systems and facilities. Incineration and unlined landfill sites will not be acceptable means of disposal, except in those isolated areas where no alternatives exist. The new standards and regulations will be based on the experiences of the Atlantic provinces in combination with research and technological advancements in waste disposal. All new waste disposal sites must operate according to those standards and regulations by 2010.

Government will finalize the standards, guidelines, and regulations within the next six to 12 months. For planning purposes the minimum requirements for new facilities are outlined below.

Landfill Sites and Transfer Stations:

- an approved site development and operation plan, including an environmental management system and a closure plan;
- a properly designed and constructed impermeable liner system with a leachate collection system, and an approved leachate management (disposal or treatment) system;
- trained supervisory personnel on site during operating hours;
- an approved plan to prevent the disposal of hazardous waste;
- daily cover of waste;
- no burning; and
- adequate insurance and performance bond (if applicable).

Composting Facility (In-vessel Format):

- operations are within enclosed buildings;
- composting facility must be supported and operated according to an approved operations plan including an environmental management plan and closure plan;
- receiving, tipping and composting areas will be within an enclosed structure, on impermeable pads and have odour control systems;
- curing areas may be enclosed or open but in all cases, underlain by an impermeable pad; and
- all areas will have leachate management, surface water management, and groundwater management systems.

Composting Facility (Open Windrow/Static Piles Format):

- operation typically includes leaf, yard waste and brush;
- composting facility must be supported and operated according to an approved operations plan including an environmental management plan and closure plan;
- the facility will be located will be a minimum distance from any water course or water body, fresh or salt water;
- receiving, tipping, composting and curing areas will be underlain by an impermeable surface;
- all parts and areas of the composting operation will have leachate, groundwater and surface water management systems; and
- measures must be implemented to minimize or prevent odours becoming a nuisance issue.

Construction and Demolition/Bulky Items Diversion/Disposal Site:

- an approved site development and operation plan, including an environmental management system and a closure plan;
- trained supervisory personnel on site during operating hours;
- a properly designed and constructed internal drainage system;
- an approved monitoring plan;
- adequate storage area for recyclable materials;
- an approved plan to prevent the disposal of hazardous waste; and
- adequate insurance and performance bond (if applicable).

Site Closure

- an assessment of rodent populations and the development of an appropriate control program;
- cleanup of all litter and wind blown debris;
- blocking of all vehicle and road access to the site;
- removal, for recycling, all metals and residual bulk waste;
- grading and compacting of site in preparation for final capping;
- construction of drainage ditches as required;
- all refuse to be covered with a minimum of one metre of fill of low permeability and graded to prevent ponding or seepage and to encourage surface drainage; and
- a plan is to be provided to monitor leachate migration and mitigate any negative effects.

Research Opportunities

For the most part, solutions to the province's waste management problems can be readily identified based on modern environmental and engineering approaches and on the experience in other jurisdictions. There are, however, solutions required for problems resulting from Newfoundland and Labrador's geology and geography and low population densities. For example, much of the land mass has limited overburden suited for use as cover material for landfills. There is a pressing need for new technologies to meet the needs of such areas.

The treatment of leachate from either new regional landfills or from existing sites that are closed during the regionalization process is also an area that requires research to develop optimal solutions for this province. In addition, waste diversion, such as recycling and composting, in areas of low population require applied research to yield economically viable solutions.

Both Memorial University of Newfoundland and the environmental industry have a role to play in developing solutions suited to our needs. Such solutions may also be applicable in other areas with similar constraints and therefore export opportunities may result.

Government will encourage and support research into appropriate solutions for the province's waste management problems.

The Strategy

- **Finalize Waste Disposal Standards and Regulations**
  Government will finalize waste management standards and regulations within the next six to 12 months. Government will also conduct periodic reviews of the standards and regulations as necessary.

- **Research New Disposal Technologies**
  Government will encourage and support the research, development and use of new disposal technologies.

- **Develop Standards for Closing Landfill Sites**
  Government develop standards for the closure and clean-up of existing landfill sites within the next 12 to 18 months.

Action Item 4: Maximize Economic and Employment Opportunities

In recent years, waste management initiatives have been a source of economic growth in all provinces, creating thousands of jobs nationally. Modern waste management creates direct employment and stimulates the development of new businesses. Economic opportunities associated with waste management include materials collection and transportation, processing and marketing recyclable materials, the design and operation of waste management facilities, and the production of new products from reclaimed materials.

In Newfoundland and Labrador, it is estimated 120 people are currently employed in local government waste management. There are 42 waste management businesses operating in the province, employing 345 full and part-time employees. In addition, the beverage container deposit refund program directly supports the operation of 37 Green Depots, 26 satellite depots, five mobile units and more than 200 full and part time jobs. The provincial waste management strategy will create more employment opportunities and encourage economic development.

A goal of the waste management strategy is to dramatically reduce the number of disposal sites and to build and operate modern waste management facilities. The need for new facilities will create employment and economic opportunities throughout the province. In addition, there will be new business and employment opportunities associated with the wide range of services needed to support waste management operations, including hazardous waste disposal, environmental monitoring and testing, and development and delivery of public information programs.

Government will work to maximize the economic and employment benefits of waste management. The provincial waste management strategy will create direct long-term employment in each of the 15 regional waste management systems. Approximately 20 to 30 people will be employed in each region with the majority of jobs involved in the operation of regional waste management facilities. When fully implemented, the waste management strategy will have created approximately 450 direct jobs throughout Newfoundland and Labrador.

In addition to direct operation jobs, the waste management strategy will create economic and business opportunities in the areas of training, operational support, and research and development. There is also considerable opportunity for the private sector to become involved in the development and implementation of the strategy either directly or through public private partnering. Government will work in partnership with business,

industry associations, post-secondary institutions, and the federal government to initiate and support directed research and development into value added products from diverted materials through funding, and pilot and/or demonstration projects.

The Strategy

- **Maximize Economic and Employment Benefits**
  Government will work to maximize economic and employment benefits with a focus on stimulating regional benefits. In addition, Government will develop requirements to ensure that waste management incorporates a Newfoundland and Labrador content.

ACTION ITEM 5: PUBLIC EDUCATION

Achieving modern, provincial waste management will require a significant change in attitude among Newfoundlanders and Labradorians with regard to the handling of waste. The response to the recent public consultations indicate the people of the province recognize that current waste management practices must change. However, it was also emphasized that a strong and ongoing information and education program is required to achieve the necessary changes in attitude and behaviour toward waste management.

Government recognizes individuals, community and municipal leaders, business, and institutions must be provided with information to understand the concept, goals and actions of modern waste management. MMSB will develop and manage a province-wide public education campaign, expanding on its current programs and activities. Regional Waste Management Authorities will also be required to develop and implement public information plans.

As the strategy is implemented, all stewardship agreements negotiated under the strategy must include an educational component. In addition, Government agencies will incorporate waste management information into publications and field investigations as appropriate.

THE STRATEGY

- **Develop Public Education Campaign**
  MMSB will develop a provincial public education campaign. In addition, MMSB in conjunction with the regional coordinators will develop regional public education campaigns.

CONCLUSION

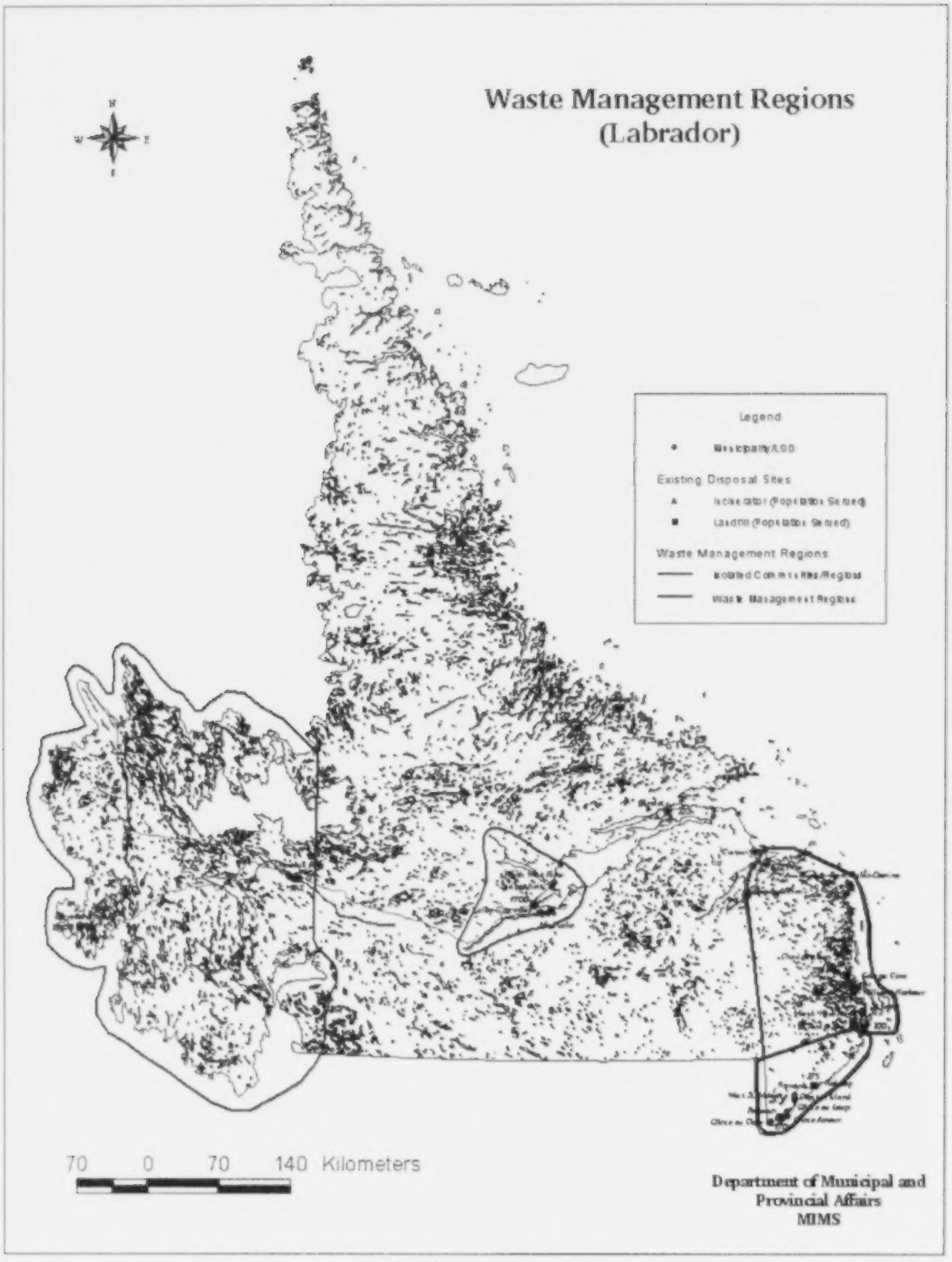
The current approach to waste management in Newfoundland and Labrador, disposing of unsorted waste into a landfill site, must change. Modern, provincial waste management is necessary and Government is committed to implementing the strategy.

Our goals for waste management are aggressive, yet achievable. As the provincial waste management strategy is implemented, we will divert 50 percent of the materials going to disposal, the number of waste disposal sites will be reduced, and open burning, incineration, and the use of unlined landfill sites will be phased out.

Government is committed to achieving these goals. It will be accomplished through increasing waste diversion, establishing waste management regions, developing modern standards and technology, maximizing the economic and employment opportunities, and public education.

All Newfoundlanders and Labradorians have a role to play in waste management. While Government is responsible for implementing a provincial waste management strategy and for setting the standards, guidelines and policies for waste management, it is the people who will ultimately implement modern waste management by changing attitudes and behaviours towards the handling of solid waste.

APPENDIX I


Waste Management Regions
(Labrador)
Legend
Existing Disposal Sites
Waste Management Regions
70 0 70 140 Kilometers
Department of Municipal and
Provincial Affairs
MIMS

Waste Management Regions (Newfoundland)

Department of Municipal and Provincial Affairs
MIMS

Legend

Waste Management Regions
- Regional Transfer Station Service Area
- Host Region for Disposal Facility
- Isolated Communities/Regions

Transportation Route
- Ferry Route
- Forest Access
- Gravel
- Paved
- TCH